Technology Demonstration Fact Sheet
System for Tracking Remediation, Exposure, Activities & Materials (STREAM)

SUMMARY

System for Tracking Remediation, Exposure, Activities & Materials (STREAM) is a computer application management tool for planning and tracking related to decontamination and decommissioning (D&D) projects. The STREAM technology demonstration was comprised of:

- Providing support to the craft supervisor for pre-job work reviews, where the craft workers, radiological control technicians (RCTs), and support staff are briefed on the work activities for the day
- The ability to enter information efficiently such as maps, photographs and facility diagrams in a format that is accessible for use by site personal to assist in day-to-day work activities.

The objectives were to provide higher quality and more up-to-date information to crafts prior to starting work, increase interest and attention during pre-job briefings and thereby enhance communications and improve understanding about the job, and measure the ease and convenience of entering new information.

To ensure a focus on a few specific activities, rather than having too broad of a view that may result in poor data collection, the demonstration was limited to the above two activities. However, STREAM has other applications, and when and where an opportunity occurred these additional capabilities were demonstrated. As a result, STREAM was also utilized for work package development, several presentations, and to reduce facility entries. The demonstration was successful and all objectives of the demonstration were met or exceeded.

An additional 6-month demonstration will be performed to evaluate benefits of using STREAM for improving communications, ALARA and radiological support enhancing safety and worker training, and for supporting the Waste Management and Engineering organizations.

INNOVATIVE TECHNOLOGY DESCRIPTION

STREAM is a multimedia database owned by Delphinus Engineering. It is designed as a “tool” for management and staff to enhance and/or facilitate productivity, safety, and ALARA principles, help ensure compliance, improve communications and training, and assist the engineering, planning, operations and waste handling organizations throughout the life cycle of a project. STREAM is not designed to replace any present database systems, nor is it to "ensure" regulatory compliance and safety. STREAM provides a tool for day-to-day work performance and management tracking. Data can be displayed in tables, reports, and chart formats, thus allowing easy understanding of progress and trends. Upon completion of the project, the information in STREAM can be retained as a visual and comprehensive legacy document for historical purposes.

BASELINE DESCRIPTION

Pre-job meetings are held at the beginning of each planned job with D&D crafts, RCTs, other support staff, and the supervisors to discuss the work to be performed. These meetings usually consist of reading the work packages and reviewing specific items of concern. The work is often hard to visualize; crafts generally reflect a passive attitude; and for new work packages, these meetings are often lengthy. This is a recognized problem that has been identified in past reviews and status reports.

Photographs of facilities are presently obtained using conventional methods. Processing requires significant time and cost, and use of the photographs is generally limited to making presentations and developing picture books. Also, baseline maps and diagrams of the facility are either not available or use is limited.

DEMONSTRATION DESCRIPTION

During the pre-job briefings, STREAM was used with an in-focus projector to project visual images (still photographs and video) on the conference room writing board where all in the room could easily see the information. The craft supervisor and other project support staff then discussed the planned work activities and specific areas of concern utilizing the information.

Using a digital camera, pictures were taken of work areas and activities, equipment operations, and other

D&D activities. The pictures were then downloaded directly to the STREAM computer and selectively filed in the appropriate data files for utilization by site personnel. Available maps and diagrams of the facility were directly downloaded or scanned into STREAM.

DETAILS OF BENEFITS

For pre-job work reviews, personnel appeared to be very interested in the visual information. Several "side" discussions were observed between workers about a specific aspect of the information being viewed. Benefits identified include:

- Workers appeared to have a clearer understanding of the condition of the area and the job to be done
- Interest by workers appeared to be higher than in similar briefings without visual information
- The interchange of information between the crafts and supervisors was excellent and stayed focused on the task to be done throughout the pre-job briefing
- The briefing ran smoothly and there were no extraneous comments or other activities that detracted from the purpose of the briefing.

Entering graphical information such as facility pictures, diagrams and map data into STREAM demonstrated ease of entering information.

Utilizing digital photographic equipment resulted in:

- A cost savings of approximately $3 per picture
- The ability to take photographs and use them immediately on a day-to-day work activities.

SUCCESS CRITERIA

Presently, there is no measurable information on the following:

- Number of entries or time spent in hazard areas
- Travel time spent in traveling to and from facilities
- The adequacy of present plan-of-the-day meetings and pre-job briefings or the attention given by personnel
- The level of equipment operating knowledge
- Many other aspects of day-to-day D&D operations

This lack of baseline information, and the fact many of the attributes of STREAM provide enhancements or capabilities that do not presently exist, prevented a quantitative comparison. Therefore, success of this demonstration was determined in large part by subjective judgement of management and staff personnel who utilized STREAM.
During the upcoming 6-month demonstration, personnel will be requested to evaluate what effect STREAM had on the following:

- Improved safety - how does the technology lower worker risks, and is there an increase in inherent safety over the present way of doing business
- Labor savings, productivity enhancement, or improved efficiency - will the use of this technology reduce the labor required, time to perform, or improve the efficiency of the task
- ALARA
- Worker knowledge of assigned tasks

SCHEDULE

The initial demonstration was performed during the February 24 through March 19, 1997, period. An extended 6-month demonstration is scheduled beginning April 1, 1997.

FUTURE APPLICABILITY

- Provide day-to-day support for briefing craft and support personnel on daily work activities
- Familiarize crafts with equipment operations or task performance and provide follow-up/OJT training
- Reduce personnel exposures to radiological and hazardous materials and improve productivity by reducing facility entries and travel to and from the facility
- Support engineering/work package development
- Enhance waste tracking (generation to disposition)
- Support management briefings and presentations

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